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Student Notes
Science on Saturday
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***Climate Change: What We
Know and What We Need to
Learn***

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The following concepts are important to understand climate change:

1. Water absorbs heat when it evaporates and gives off heat when it condenses.

Examples:

2. Energy comes from the sun, is stored and redistributed.

Examples:

3. The earth emits infrared radiation, which is lost to space.

Examples:

4. Convection currents result when warm air rises and cold air sinks. The same is true for water.

Examples:

5. Weather systems and ocean circulations redistribute energy on earth.

Examples:

Climate Modeling

1. What is climate modeling?
2. What do we know about climate change?
3. What do we still need to learn?

Resources:

http://www.elistore.org/reports_detail.asp?ID=10915&topic=International
http://www.ucar.edu/learn/1_1_1.htm
<http://www.geosociety.org/educate/resources.htm>

Earth Science Standards: Grades 9-12

4. Energy enters the Earth system primarily as solar radiation and eventually escapes as heat.
5. Heating of Earth's surface and atmosphere by the sun drives convection within the atmosphere and oceans, producing winds and ocean currents.
6. Climate is the long-term average of a region's weather and depends on many factors
7. Each element on Earth moves among reservoirs, which exist in the solid earth, in oceans, in the atmosphere, and within and among organisms as part of biogeochemical cycles.